Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (currently amended) A method of rapid color recognition according to a basic color component data of a pixel to recognize and output a color code, the method comprising:

providing a regular triangle plane by normalizing basic color component data;

providing an isosceles right triangle plane by extending and scaling the regular triangle plane by using one side of the regular triangle plane as a base;

dividing the isosceles right triangle plane into a plurality of areas along two sides except the base by using i lines having slope 1 and j lines having slope -1; and

identifying an area for representing a color of the pixel according to the basic color component data of the pixel, and outputting the color code according to a predetermined color classification table of the area.

Claim 2. (currently amended) The method of claim 1, when the normalized basic color component data of the pixel is represented by (c1, c2, c3), and a magnification is represented by s, a data of the pixel is transformed into ((c1-c2+1)*s, c3*s) to extend and scale the regular triangle plane into the isosceles right triangle plane.

Claim 3. (currently amended) The method of claim 1, wherein when the basic color component data of the pixel is represented by C1, C2 and C3 respectively, the identification of the area for representing the color of the pixel is according to equations below:

$C1*I_m > (C1+C2+C3) > C1*I_{m+1}[[m+1]]$

$C2*J_n > (C1+C2+C3) > C2*J_{n+1}[[n+1]]$

wherein I_m, I_{m+1}, J_n and J_{n+1} represent coefficients corresponding to a position of the division of the isosceles right triangle by using the i lines having slope 1 and the j lines having slope -1, wherein m and n are integers and $0 \le m \le i$, $0 \le n \le j$.

Claim 4. (original) The method of claim 1, further comprising:

identifying whether the pixel is chromatic or achromatic according to the basic color component data of the pixel; and

identifying an area for representing the color of the pixel according to the basic color component data of the pixel, and outputting the color code according to the predetermined color classification table of the area when the pixel is chromatic.

Claim 5. (currently amended) The method of claim 4, wherein when the basic color component data of the pixel is represented by C1, C2_and C3 respectively, whether the pixel is chromatic or achromatic is identified according to equations below:

$$Th1\_l \le C3\text{-}C2 \le Th1\_r,\ Th1\_t \le C1\text{-}C2 \le Th1\_b \text{ and } 0 \le (C1+C2+C3) < Th1 \quad (1);$$

$$Th2\_l \le C3\text{-}C2 \le Th2\_r,\ Th2\_t \le C1\text{-}C2 \le Th2\_b \text{ and } Th1 \le (C1+C2+C3) < Th2 \quad (2);$$

$$Th3\_l \le C3\text{-}C2 \le Th3\_r,\ Th3\_t \le C1\text{-}C2 \le Th3\_b \text{ and } Th2 \le (C1+C2+C3) \quad (3);$$

wherein the Th1_l, the Th1_r, the Th1_t, the Th1_b, the Th2_l, the Th2_r, the Th2_t, the Th2_b, the Th3_l, the Th3_r, the Th3_t, the Th3_b, the Th1 and the Th2 represent predetermined parameters and Th2>Th1>0, when any one of equation (1), (2) or (3) is satisfied, the pixel is identified to be achromatic.

Claim 6. (original) The method of claim 4, wherein when the pixel is identified to be

achromatic, further comprises:

identifying whether the color of the pixel is black color, white color or gray-scale color according to a brightness of the pixel; and

outputting a color code of the black color, the white color or the gray-scale color.

Claim 7. (currently amended) The method of claim 6, wherein when the basic color component data of the pixel is represented by C1, C2 and C3 respectively, whether the color of the pixel is black color, white color or gray-scale color is identified according to the brightness of the pixel according to equations below:

when $(C1+C2+C3) \leq Th\_black$, the color of the pixel is identified to be black color; and

when $(C1+C2+C3) \geq Th\_white$, the color of the pixel is identified to be white color;

wherein the Th_black and the Th_white are predetermined parameters of the brightness.

Claim 8. (currently amended) A method of rapid color recognition according to a basic color component data of a pixel to recognize and output a color code when the basic color component data of the pixel is represented by C1, C2 and C3 respectively, the method comprising:

identifying an area for representing a color of the pixel according to equations below:

$C1*I_m > (C1+C2+C3) > C1*I_{\underline{m+1}}[[m+1]]$

$C2*J_n > (C1+C2+C3) > C2*J_{\underline{n+1}}[[n+1]]$

wherein I_m, I_{m+1}, J_n and J_{n+1} represent different coefficients respectively; and

outputting a color code according to a predetermined color classification table of the area.

Claim 9. (original) The method of claim 8, further comprising:

identifying whether the pixel is chromatic or achromatic according to the basic color

component data of the pixel; and

identifying the area for representing the color of the pixel according to the basic color component data of the pixel, and outputting the color code according to the predetermined color classification table of the area when the pixel is chromatic.

Claim 10. (currently amended) The method of claim 9, wherein whether the pixel is chromatic or achromatic is identified according to equations below:

$$Th1\_l \le C3\text{-}C2 \le Th1\_r,\ Th1\_t \le C1\text{-}C2 \le Th1\_b \text{ and } 0 \le (C1+C2+C3) < Th1 \quad (1);$$

$$Th2\_l \le C3\text{-}C2 \le Th2\_r,\ Th2\_t \le C1\text{-}C2 \le Th2\_b \text{ and } Th1 \le (C1+C2+C3) < Th2 \quad (2);$$

$$Th3\_l \le C3\text{-}C2 \le Th3\_r,\ Th3\_t \le C1\text{-}C2 \le Th3\_b \text{ and } Th2 \le (C1+C2+C3) \quad (3);$$

wherein the Th1_l, the Th1_r, the Th1_t, the Th1_b, the Th2_l, the Th2_r, the Th2_t, the Th2_b, the Th3_l, the Th3_r, the Th3_t, the Th3_b, the Th1 and the Th2 represent predetermined parameters and Th2>Th1>0, when any one of equation (1), (2) or (3) is satisfied, the pixel is identified to be achromatic.

Claim 11. (original) The method of claim 9, wherein when the pixel is identified to be achromatic, further comprises:

identifying whether the color of the pixel is black color, white color or gray-scale color according to a brightness of the pixel; and

outputting a color code of the black color, the white color or the gray-scale color.

Claim 12. (currently amended) The method of claim 11, wherein when the basic color component data of the pixel is represented by C1, C2 and C3 respectively, whether the color of

the pixel is black color, white color or gray-scale color according to the brightness of the pixel is identified according to equations below:

when (C1+C2+C3) ≤ Th_black, the color of the pixel is identified to be black color; and

when (C1+C2+C3) ≥ Th_white, the color of the pixel is identified to be white color;

wherein the Th_black and the Th_white are predetermined parameters of the brightness.